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to record them. In the north-west quadrant there existed a broad irregular marking running north and south, and spreading westward along the boundary of the northern white spots."

"The night of the 25th was even finer than that of the 4th, and the telescope and atmosphere being both in good condition the image of the planet was scarcely impaired by any false light, but presented during the hour occupied in making the sketch, a continuous impression of hard and distinct markings, which appeared to be inconsistent with the supposition that the configuration could be due to a clouded atmosphere."

On the Parallax of β Centauri. By Mr. Maclear.

The observations on which this investigation is founded were made between July 29, 1842, and October 28, 1844, under the same circumstances, and nearly at the same time, with a portion of the observations of *α Centauri*, published in Vol. xx. of our *Memoirs.* The result is not to be deemed conclusive, but it has sufficient weight to make it of considerable positive value. A new series of observations has been commenced since, with the systematic circumspection demanded by such researches, but which was not previously practicable.

The mode of observation, computation, &c. is the same as that described in the *Memoirs*, vol. xx.

It does not appear that *β Centauri* has any *decided* proper motion. The mean N.P.D. for Jan. 1, 1843, is 149° 36′ 41″·6.

By 137 observations of *β Centauri*, Mr. Maclear finds,—

		″		″
Parallax *β Centauri*	=	0·47	Probable Error	0·044
Constant of Aberration	=	20·59	— —	0·049

Errata in Mr. Maclear's Memoirs, Vol. XX. Roy. Ast. Soc. Mem.

Vol. xx. page 52, column B.A.C. *for* 4339, *read* 4399.
— — — 54, line 13 from top, R.A. of Rümker, *for* $14^h\ 36^m\ 34{\cdot}5$, *read* $14^h\ 36^m\ 44^s{\cdot}5$.
— — — 55, line 16 from top, *for* $15^h\ 0^m\ 5^s{\cdot}9$, *read* $15^h\ 0^m\ 5^s{\cdot}59$.
— — — 25, Oct. 21, *for* reduction 22″·84, *read* 23″·84.
— — — — — — *for* 127° 30′ 15″·60, *read* 127° 30′ 14″·60.

Extracts of a Letter from Lieut. Gilliss, U.S.N.

"*Santiago de Chile.*

"The weather continues to favour us in one sense, having enabled me to obtain above 800 differential measures between *Mars* and stars in the ephemeris sent you, besides meridian observations of the *N. A.* ephemeris also. . . . Brorsen's comet will be looked after as soon as it comes within striking distance of our

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instruments: thanks to the copy of *Astr. Nach.* . . . I have thought for the last eight or ten nights that η *Argûs* is diminishing in brightness. It certainly is not brighter than the combined light of α *Centauri*, as it was again last summer; but the two are not yet favourably situated for comparison, being at unequal heights. . . . Can you not persuade one of your munificent patrons of astronomy to send his powerful telescope out here? I am convinced that it would unfold more wonders in physical astronomy *every year* than a lifetime would afford in your atmosphere."

Extracts of a Letter from Lieut. Gilliss, U.S.N., to Capt. Smyth.

"1852, *January* 20, *Santiago de Chile.*

"By the last mail from home, I received a copy of the 'Contributions to Astronomy and Geodesy,' forming part of vol. xx. *Mem. Ast. Society*, by Thos. Maclear, Esq. . . .

"You are probably aware it formed no part of my intention to re-examine existing catalogues, but to make a systematic sweep of the heavens from the pole towards the zenith, completing as much as possible in the time appointed for our stay in Chile. Each night's work is roughly compared with the catalogue to ascertain discrepancies of note, if any, and learn whether any star seen by others has been accidentally passed over. Subsequently becoming convinced that we must leave a belt of 25° between the zenith and pole unexamined, I devoted every Sunday night, when the assistants claimed holyday, to a search for those stars in Lacaille between the zenith and the upper zone, which had never been seen by any other observer. In this proceeding, a great many errors have been corrected, portions of which have been made known to astronomical friends from time to time, beginning with yourself, in July 1850, though whether any others have published them I have no means of knowing, Dr. Gould's journal having reached me very irregularly. Since the commencement of the series of observations on the planet *Mars*, my examination has, of necessity, been discontinued, and may not be resumed during the remainder of our stay here.

"I am glad to find that Mr. Maclear has confirmed the errors in the B.A.C. pointed out by our observations. There are one or two others in the same catalogue that are not mentioned by him, and I transcribe them from our note-book:—

No. 7619. There is no star in this position. Two, coinciding tolerably in declination, are in R.A. $21^h\ 43^m\ 0^s$ and $21^h\ 47^m{\cdot}0$ of the 10th and 9th mags. respectively.
7938. The proper motion in declination is not confirmed, and Lacaille is correct.

Errors in Lacaille's Catalogue.

No. 134. Polar distance, 10′ too great.
619. The nearest star so bright as 9th follows 30^s, and is 10′ north.
697. The nearest star to this position precedes it 35^s, and is 9′ south.
829. A double star follows this position 15^s and 8′ south, but there are no others.

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No. 884. Not found when looked for, Nov. 9th, and Dec. 7th, 1851.
980. Does not exist here. I find 982.
1013. Right Ascension -10^s, Polar Distance $-4'$.
1094. The nearest star in this place follows 10^s and is $3'$ north.
1263. $2'$ too far south.
1283. } Two observations of these stars make their difference of R.A. $15^s{\cdot}33$,
1285. } and of P.D. only $8''$.
1295. Nearly $8'$ too far south.
1334. Does not exist.
1339. I could not perceive any nebulous portion with all light off.
1414. Near $3'$ too far south.
1545. $2'$ too far south.
1816. } There is only one star, and this corresponds with the R.A. of the latter,
1819. } whilst its P.D. is between the two.
7678. Polar Distance $3'$ too great.
8746. Does not exist.
9070. The nearest star is $8\frac{1}{2}$ mag., 26^s west, and $3'$ north of this place.
9232. The star we find precedes $1^m\ 10^s$, and is $2\frac{1}{2}'$ south of this.
9247. Not found in two searches.
9645. Polar distance $3'$ too great.
9734. The nearest star is 33^s following, and $4'$ south of this position.

"Whenever a discrepancy is detected by our observations, the star is noted in a book kept for the purpose, and made the subject of special attention, being usually observed twice afterwards; and though the errors above given you are only approximate, those who are compiling for a new catalogue may very safely mark those named to *be disposed of hereafter.* This list has not been communicated to any other correspondent.

"I very greatly regret to be obliged to acknowledge two errors in the ephemeris of *Mars*, which was sent to you before I left the United States. The places of all the stars within certain limits, or rather the catalogues containing these places, were given to the young officers who were to accompany us, that they might compute the corrections necessary. Although the computations were in duplicate, you see the result: Dec. 25th, a star has been given for comparison, just $20'$ off, and Jan. 15th, another precisely 1° off. On the former night I repeated the differentials with the star of the preceding night; but on the latter was obliged to content myself with meridian observations only.

"Besides the star of the special ephemeris referred to, at least one of those in the *Nautical Almanac* is also observed. So far the work has given me much satisfaction. On some nights I have obtained as many as forty differentials, showing the motion of the planet in every interval with far greater precision than was expected; and if observers in the northern hemisphere have been alike successful, our mission may not have been in vain. So far, the only cloudy nights in December were the 15th, 17th, 18th, and 23d; in January, the 3d and 18th. In the former month there were 365 differentials, and in this above 400.

"A reduction of 27 moon-culminations and two occultations, on the assumption that the tabulated places are correct, makes our observatory $4^h\ 42^m\ 18^s{\cdot}9$ West of Greenwich. There has recently been a survey between this city and Valparaiso, for the purpose of

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locating a railroad; and the engineer, Allen Campbell, Esq., writes me, 'I am puzzled about longitude. I find that an air-line from Santa Lucia to Valparaiso does not exceed (by my survey) 64 English miles. Deducing the longitude of Valparaiso by this datum from your longitude, I make it only 71° 35′ 00″. Mr. Mowatt calls it 71° 40′ 30″, and by Capt. Fitzroy it is 71° 41′ 15″, making a difference between us of about 5 miles.' And, in a subsequent letter, he says, 'I have been over our work again, and we find it all right; so Valparaiso is undoubtedly farther east than Mowatt or Fitzroy make it. I am told old tables stated its longitude 71° 35′, and this would seem near the truth." A chronometer (pocket), which has been running very regularly, and brought here two days since, gives a difference of time $3^m\ 56^s{\cdot}1$, thus placing Valparaiso in $4^h\ 46^m\ 15^s$, if our longitude be correct. The same chronometer will be again transported in a few days, though too late for the result to be communicated in this letter. As the longitude of Valparaiso is of greater interest than that of any other point on the western coast, I have proposed to Señor Pissis, an engineer employed by the Chile Government to make a survey of the Republic, that we shall determine the difference of time between it and our observatory, by means of rockets and flashes of gunpowder. This will be carried into effect next month, there being a hill to the northward which is visible from both stations.

"Our geographical position has recently enabled me to observe two phenomena of more than ordinary interest, viz. two immersions and two emersions of *η Geminorum*, on the 5th inst., and an earthquake, under a magnifying power of 150, some nights afterwards; but my letter has already been extended beyond your patience perhaps, and I will not trouble you with them.

"The desire for information respecting the Wager has never been lost sight of; and the only person able to give any information has been talked with more than once. This is General Aldunate, formerly Intendent of Chiloe, but now Director of the Military Academy here. He seems to have no doubt that parts of the old ship would be found; but to do so, would require a special voyage, as the locality of the wreck is never visited. At the time of Capt. Fitzroy's survey, there was an old man on the island, who had assisted in removing a part of her guns, and with whom Fitzroy had a long conversation in the presence of the General.

"P.S. In my letter of July 28th, 1850, I find that an error of 2^m was made in giving you our longitude."

Extract of a Letter from Capt. W. S. Jacob of the Madras Observatory.

"I was quite unaware, until I saw it mentioned in the Annual Report for 1851, that the Lucknow Observatory was no longer kept up since the death of Col. Wilcox. It is my intention to act on the suggestion given in a note to the Report, that the Lucknow instruments might possibly be procured for Madras, and to apply